

TANDEM COMPRESSORS WITH DISCHARGE VALVE ON CONNECTING LINES

ABSTRACT OF THE DISCLOSURE

A refrigerant cycle is disclosed having a number of compressors operating in tandem and supplying a compressed refrigerant to a refrigerant system. Discharge lines communicate a compressed refrigerant to a central discharge line for receiving flow from all tandem compressors. A control is operational to determine a number of compressors need to be operated or whether some compressors should be shutdown to satisfy load requirements. Shutoff valves are placed on discharge lines outwardly of the shell of the compressors. That can be shutdown during part load operation. These shutoff valves are closed when their associated compressors are stopped to prevent backflow of refrigerant from operating compressors through the shutoff compressor, and into the system suction side. Additionally, high pressure differential across the compressor internal discharge check valve is eliminated and the possibility of compressor flooding through a discharge line is reduced. Thus, compressor/system performance is enhanced and reliability is improved.